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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/723,585	11/28/2000	Alexander J. Dyakonov	4800-090	8519

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EXAMINER

LOPEZ, CARLOS N

ART UNIT	PAPER NUMBER
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1731

DATE MAILED: 08/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

## Application No.

09/723,585

## Applicant(s)

DYAKONOV ET AL.

## Examiner

Carlos Lopez

## Art Unit

1731

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 20 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-3,22-30 and 32-74 is/are pending in the application.
- 4a) Of the above claim(s) 41-45 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,22-30,32-40 and 46-74 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1) Claims 1-3, 22-26, 28-30, 32-40, 46-51, and 53-74 are rejected under 35 U.S.C. 103(a) as unpatentable over Dale et al (US 4,317,460) in view of Farrar et al (US 4,331,165). As noted by Dale's claim 1, a cigarette filter comprises a catalyst held by a support structure. In particular Dales' invention is drawn to a cigarette filter having a catalyst retaining its high activity for oxidizing carbon monoxide. Dales' catalyst system for the cigarette filter comprises of a metal component belonging to Groups 6-8 of the periodic table (Column 4, lines 15-50) with a support structure made of a zeolite or alumina (amorphous oxide) (Bridging paragraph of Columns 4 and 5). Dale teaches that the described catalyst may be used in the triple filters for smoking products, wherein the middle portion contains the catalyst system or the catalyst system may be part of the whole cigarette filter (Column 6, lines 57-68). Dale additionally notes that carbon monoxide formed by the burning cigarette and received by the smoker would depend on the air supplied through the walls of and along the length of the cigarette (Col. 1, lines 1ff); such as the walls formed by the cigarette filter wrapper. Dales notes that by increasing the air supply the proportion of carbon monoxide can be reduced.

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While Dale is silent how to achieve an increased air supply, Farrar teaches that providing perforations on the cigarette filter wrapper to allow air from the atmosphere be drawn in through the side of the filter to mix with smoke taken by the smoker (Col. 1, lines 6ff). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to provide perforations/ventilating holes on the cigarette filter wrapper as taught by Dale and Farrar in order to further reduce the proportion of carbon monoxide reaching the smoker.

It is noted that the claimed adsorbent material is deemed as the catalyst support of Dale, because it meets applicant's definition of the term "adsorbent material" that being a zeolite or alumina. While Dale is silent disclosing that the adsorbent adsorbs carbon dioxide, it is considered that said function is capable of being performed by the catalyst support of Dale because applicant, like Dale, uses the same material, zeolite or alumina.

It also noted that the claimed function of having a portion of carbon monoxide adsorbed in the adsorbent material be discharged from the smoking article through at least one venting hole is considered to be a functional limitation capable of being performed by the cigarette resulting from the teachings of Dale and Farrar. The venting holes which would be proximate to the adsorbent material forming the filter, since it wraps the filter, and allows for the discharge to occur since there is no means for stopping the adsorbed carbon monoxide to come out of the holes.

The term "carbon monoxide pump" is being considered as a cigarette filter capable of filtering carbon monoxide. Additionally, in regards to the limitation that the smoking article comprises a tobacco column and a wrapper surrounding the tobacco column, it is common knowledge that a cigarette, for which the cigarette filter of Dale is used for, has a tobacco column surrounded by a wrapper.

As for claim 23,25 and 50, Dale teaches that transition metals may be used as a catalyst, see col. 4 lines 35-50, thus including the claimed silver and dysprosium transition metals.

As for claim 23 and 48, the venting holes would divert some of the carbon monoxide from being inhaled.

As for claim 24 and 49, the silver and nickel in coming in contact with air provided by the venting holes would convert to silver and nickel oxides.

As for claim 26,51, it would have been obvious to a person of ordinary skill in the art to conduct routine experiments to select the proper silver content as an obvious optimization of result-effective variables to obtain the desired degree of removal of carbon monoxide without affecting the taste of the cigarette.

As for claims 32-33, 55-56 and 72, the propensity to absorb would be dependent on the inhalation time of the smoker.

As for claims 64, 34-38, and 57-58, the catalyst are supported in zeolite or alumina are capable of acting as adsorbents since they are both made of the same

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material (See bridging paragraph of col. 5-6). Additionally, the zeolite has the claimed size of 4 to 16 angstroms.

As for claim 39 and 59-63, alumina is considered amorphous.

As for claims 46 and 47, the claimed fitting is the tipping paper present in conventional cigarettes in order to join the filter element to the tobacco rod element of a filter cigarette.

**2)** Claims 27 and 52 are rejected under 35 U.S.C. 103(a) as unpatentable over Dale et al (US 4,317,460) in view of Farrar et al (US 4,331,165) as applied to claims 22-23 and 47 above and in further view of Bowen et al (US 6,286,516). The teachings of Farrar and Dale are silent disclosing a combination of nickel and dysprosium as catalyst. However, as taught by Bowens in Col. 8, lines 25-45, catalyst for cigarette smoke may include mixtures of metals from the platinum group metal (such as the claimed nickel), and lanthanides series (such as dysprosium) in order to removed the targeted undesired component of cigarette smoke such as carbon monoxide, aldehydes and reduce of odors. At the time the invention was made it would have been obvious to a person of ordinary skill in the art to have provided combinations of lanthanide metal group and or platinum metal groups catalyst, as taught by Bowen, in the cigarette resulting from the teachings of Dale and Farrar in order to removed the desired component of cigarette smoke such as carbon monoxide, aldehydes and/or reduce of odors of cigarette smoke.

***Response to Arguments***

Applicant's arguments with respect to claims 1-3, 22-30, 32-40 and 46-74 have been considered but are moot in view of the new ground(s) of rejection.


***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carlos Lopez whose telephone number is 571.272.1193. The examiner can normally be reached on Mon.-Fri. 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571.272.1189. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CL

  
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